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EXAMINER

AKHAVANNIK, HADI

ART UNIT	PAPER NUMBER
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2624

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Response to Arguments

The objection to claim 6 is withdrawn.

The 101 rejection is withdrawn.

Applicant's argues that neither Avinash does not teach the spatial enhancement filter. The examiner believes this feature is taught in figure 3, item 78. Here an intermediate filtered image is taught that is based on a first image and then the image is changed to a second image that is expanded. This is also taught in column 6 line 50 to column 7 line 11.

Also, as explained in the rejection, Berkner discloses making a higher resolution image by using the LL and HH image to create higher resolution image.

Please see the final office action below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkner et al. (7239424 referred to as "Berkner" herein) in view Avinash et al. (6592523, referred to as "Avinash" herein).

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Regarding claim 1, Berkner discloses an image conversion unit for converting a first image with a first resolution into a second image with a second resolution, the second resolution being higher than the first resolution that the image conversion unit comprising: a noise adder arranged to add noise to the second image, wherein the said noise comprises spectral components that are in a part of a frequency spectrum that is above the Nyquist frequency of the first image (see figure 4b and column 16 line 62 to column 17 line 5. In this case the first image is the LL image and blue noise is added to HH and then this data is combined back together to the original first LL image to create a higher resolution with blue noises added to the LL image. The information is above the Nyquist frequency of the first image because the information is added to the HH region which is outside the frequency spectrum of the first LL image).

Regarding claim 1, Berkner does not explicitly disclose a filter.

Please see figure 3 of Avinash as it discloses filters in the intermediate range that are used to filter and enhance the first image to create a better second image. The structures which make up the image are enhanced by the filter. Also see columns 6-7 of Avinash.

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Berkner the filter as taught by Avinash. The reason for the combination is because it makes for a more robust system that is able to enhance images using a filter.

Regarding claims 2-3, as disclosed above Berker discloses that the noise is above the Nyquist of the first image and that the noise is blue noise.

Regarding claim 4, Berker discloses that noise may be added to each wavelet decomposition image including the LL image in column 17 lines 1-5. The amount of noise energy would therefore be higher than the energy of the further components.

Regarding claim 5, Berkner discloses that the amount of noise that is added is based on a noise measurement (see column 16 lines 62-70 which discloses noise measurement to create the desire colored for halftoning).

Regarding claim 6, see the rejection of claim 1, where Avinash discloses that a filter is applied to an intermediate image that will result in a second image in figure 3.

Regarding claims 7-8, please see the rejection of claim 1 as it discloses all aspects of claim 7-8.

Regarding claims 9-10, please see column 17 lines 45-57 as it discloses a display.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HADI AKHAVANNIK whose telephone number is (571)272-8622. The examiner can normally be reached on 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/
Supervisory Patent Examiner, Art Unit 2624

HA
4/20/09